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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,596	02/15/2002	Alan D. Snow	017170-0010-999	2850

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EXAMINER
CHONG, YONG SOO

ART UNIT	PAPER NUMBER
1617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/077,596	SNOW ET AL.	
	Examiner	Art Unit	
	Yong S. Chong	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-38,55 and 56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-38, 55-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

This Office Action is in response to applicant's arguments filed on 3/14/2007. Claim(s) 1-27, 39-54 have been cancelled. Claim(s) 28-38, 55-56 are pending and examined herein.

Applicant has cancelled claim 41, rendering the objection to claim 41 moot, therefore hereby withdrawn.

Applicant's arguments have been fully considered but found not persuasive. The rejection(s) of the last Office Action are maintained for reasons of record and repeated below for Applicant's convenience.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 28-38, 55-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the limitation regarding "wherein the proanthocyanidin constitutes at least 70% of an active component of the composition" in the application as originally filed.

Response to Arguments

Applicant argues that there is support for the above limitation because the specification recites "proanthocyanidins at 70% purity." This is not persuasive because this recitation cannot be extrapolated to mean "at least 70% of the active ingredient in the instant composition," since components other than active ingredients, such as excipients, diluents, and carriers may comprise the instant composition. Furthermore, generally when purity is mentioned, one of ordinary skill in the art interprets it as 70% proanthocyanidins and 30% impurities.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham vs John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim(s) 28-38, and 55-56 are rejected under 35 U.S.C. 103(a) as being obvious over Kuznicki et al. (5,681,569 of record).

Kuznicki et al. discloses a composition comprising green tea solids extracted from tea material, i.e., 0.01-0.35% flavanols or catechins wherein the catechin or a mixture of two or more the catechins are catechin, epicatechin, gallocatechin, epigallocatechin gallate and epicatechin gallate (see particularly col.3 lines 20-21 and 26-28), and a pharmaceutical carrier (i.e., water). See also abstract, co1.2, lines12-14; Example I, II, and III at co1.10, and claims 1 and 5-6. Thus, the green tea composition of Kuznicki et al. inherently comprises proanthocyanidins oligomers having the formula I and II herein and/or procyanidins such as the dimers and trimers of catechin and epicatechin herein.

The inherency of the green tea compositions containing proanthocyanidins and/or procyanidins is supported by the references by Hashimoto et al. (see "FC" in PTO-1449 submitted April 30, 2004). Hashimoto et al. teach that proanthocyanidins are isolated from oolong tea (a well known green tea), and/or the flesh leaves of green teas therein, wherein proanthocyanidins can be degraded to catechin and epicatechins by hydrolysis. Most importantly the compounds identified by Hashimoto et al. in the qreen tea compositions are the instant compounds havin.q the formula I or II (see Chart 2, the first two compounds on the top of pa.qe 3257). Morimoto et al. also teach that proanthocyanidins or procyanidins wherein proanthocyanidins can be degraded to catechins and epicatechins.

Kuznicki et al. also discloses the composition therein is therapeutically useful in improving cognitive performance (see co1.3 line 33 in particular). The therapeutic effective amount of a catechin or mixture of catechins, within the instant claim (10-

100mg/kg of bodyweight of the subject), is disclosed in the Example I and III (see col. 10 lines 1-41) as shown in the calculation below:

Example III discloses that a person can consume 835 cc (835 ml) of a beverage prepared according to Example I (see co1.10 lines 40-41).

Since the water in the composition in Example I is 94.45%, the composition is aqueous solution. The density of water = 1 g/ml, thus the total amount of the composition in Example I is 835 g.

According to Example I, the effective amount of catechins (or flavanols)

= 835g X 0.097% (see co1.10 line 15 in particular) = 0.8099 g = 809.9 mg

OR in different calculation, according to Example I (see particularly at co1.10 lines 6 and 13-14)

the effective amount of catechins

= 835g X 0.35/100 X 29/100 = 0.8475 g = 847.5 mg.

Since a standard person weight is 70 kg, the range of effective amounts of catechins is 10 mg/kg X 70 kg =700 mq to 1000 mg/kg X 70 kg = 70,000 mg.

Thus, the effective amount of catechins as exemplified in Example I in the composition of Kuznicki et al., 809.9 mg or 847.5 mg, is within the instant claimed range.

Kuznicki et al. also discloses that catechins therein are extracted from green teas or other plants, and isolated from green tea by methods well known to those in the art (see particularly at col.4 lines 6-14). Thus, their percentage purity herein is known to significantly exceed a proportion percentage of the catechin presence in a plant, which

is an inherent property of the composition of Kuznicki et al. Kuznicki et al. also discloses that catechins can be prepared by synthetic chemical method or commercially available (see col.4 lines 14-17).

However, Kuznicki et al. does not disclose a composition with at least 70% of the active component.

It would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made to have optimized the amount of active agent in the disclosed composition.

A person of ordinary skill in the art would have been motivated to make this optimization because (1) the active agent is disclosed in the composition and (2) it is obvious to optimize the amount when the general conditions are given. Therefore, one would have had a reasonable expectation of success in formulating a pharmaceutical composition comprising proanthocyanidin in at least 70% of the composition.

Generally, mere optimization of ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "When the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimal or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); see also *In re Peterson*, 315 F. 3d at 1330, 65 USPQ 2d at 1382 "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages." MPEP 2114.04.

Claim(s) 28, 31-38, and 55-56 are rejected under 35 U.S.C. 103(a) as being obvious over JP 10245342 of record.

JP 10245342 discloses a pharmaceutical composition for diminishing the toxicity in nerve cells caused by β-amyloid protein comprising a catechin or two or more of catechin such as epigallocatechin gallate and epicatechin gallate prescribed in effective amounts (doses) of diminishing the toxicity of β -amyloid protein (see particularly page 1, the 2"d paragraph; claims 1-3 at page 1; page 2 [0001], [0002]), and a pharmaceutical carrier (i.e., water). See also page 7 [0028]; page 8 [0029]. Thus, the green tea composition in JP 10245342 inherently comprises proanthocyanidins oligomers having the formula I and II herein and/or procyanidins such as the dimers and trimers of catechin and epicatechin herein since catechins are known to encompass these compounds which are known to be isolated from green tea, as discussed above based on the references by Hashimoto et al., and Morimoto et al.

JP 10245342 also discloses that catechins therein are extracted from teas or other plants, and isolated and purified by HPLC (see page 6 [0027]). Thus, their percentage purity herein is known to significantly exceed a proportion percentage of the catechin presence in a plant, and substantially pure isolated, which is an inherent property of the composition therein.

However, JP 10245342 does not disclose a composition with at least 70% of the active component.

It would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made to have optimized the amount of active agent in the disclosed composition.

A person of ordinary skill in the art would have been motivated to make this optimization because (1) the active agent is disclosed in the composition and (2) it is obvious to optimize the amount when the general conditions are given. Therefore, one would have had a reasonable expectation of success in formulating a pharmaceutical composition comprising proanthocyanidin in at least 70% of the composition.

Claim(s) 28, 31-38, and 55-56 are rejected under 35 U.S.C. 103(a) as being obvious over Hashimoto et al. of record in PTO-1449 submitted April 30, 2004.

Hashimoto et al. discloses a composition comprising a catechin or two or more of catechins such as epigallocatechin and dimers and proanthocyanidins (having the formula I and II herein) and/or procyanidins such as the dimers and trimers of catechin and epicatechin in effective amounts, and a pharmaceutical carrier (i.e., water). See abstract. Thus, the oolong tea composition in Hashimoto et al. comprises the instant compounds herein since these compounds are known to be isolated from oolong tea. Most importantly the compounds identified by Hashimoto et al. in the qreen tea compositions are the instant compounds havinq the formula I or II (see Chart 2, the first two compounds on the top of paqe 3257).

Hashimoto et al. also discloses that proanthocyanidins are extracted from teas or other plants, and isolated (see page 6 [0027]). Thus, their percentage purity herein is

known to significantly exceed a proportion percentage of the catechin presence in a plant, and substantially pure isolated, which is an inherent property of the composition therein.

However, Hashimoto et al. does not disclose a composition with at least 70% of the active component.

It would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made to have optimized the amount of active agent in the disclosed composition.

A person of ordinary skill in the art would have been motivated to make this optimization because (1) the active agent is disclosed in the composition and (2) it is obvious to optimize the amount when the general conditions are given. Therefore, one would have had a reasonable expectation of success in formulating a pharmaceutical composition comprising proanthocyanidin in at least 70% of the composition.

Claim(s) 28, 31-38, and 55-56 are rejected under 35 U.S.C. 103(a) as being obvious over Morimoto et al.(PTO-892).

Morimoto et al. discloses a composition comprising a catechin or two or more of catechins such as epigallocatechin and dimers and procyanidins (having the formula I and II herein) such as the dimers and trimers of catechin and epicatechin in effective amounts, and a pharmaceutical carrier (i.e., water). See abstract, page 908-909. Most importantly the compounds identified by Morimoto et al. are the instant compounds havinq the formula I or II (see paqe 909, Compound 3 and paqe 908).

However, Morimoto et al. does not disclose a composition with at least 70% of the active component.

It would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made to have optimized the amount of active agent in the disclosed composition.

A person of ordinary skill in the art would have been motivated to make this optimization because (1) the active agent is disclosed in the composition and (2) it is obvious to optimize the amount when the general conditions are given. Therefore, one would have had a reasonable expectation of success in formulating a pharmaceutical composition comprising proanthocyanidin in at least 70% of the composition.

Claim(s) 28, 31-38, and 55-56 are rejected under 35 U.S.C. 103(a) as being obvious over Hatano et al. for reasons of record stated in the Office Action dated September 30, 2003.

Hatano et al. discloses a composition for anti-HIV comprising or inherently comprising a catechin or two or more of catechins such as epigallocatechin and dimers or proanthocyanidins oligomers having the formula I and II herein and/or procyanidins such as the dimers and trimers of catechin and epicatechin in effective amounts, and a pharmaceutical carder (i.e., water). See abstract.

Thus, the composition in Hatano et al. inherently comprises the instant compounds herein since these compounds are known to be isolated from Camellia japonica plants. See abstract.

Hatano et al. also discloses that catechins therein are extracted from plants, and isolated (see page 6 [0027]). Thus, their percentage purity herein is known to significantly exceed a proportion percentage of the catechin presence in a plant, and substantially pure isolated, which is an inherent property of the composition therein.

However, Hatano et al. does not disclose a composition with at least 70% of the active component.

It would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made to have optimized the amount of active agent in the disclosed composition.

A person of ordinary skill in the art would have been motivated to make this optimization because (1) the active agent is disclosed in the composition and (2) it is obvious to optimize the amount when the general conditions are given. Therefore, one would have had a reasonable expectation of success in formulating a pharmaceutical composition comprising proanthocyanidin in at least 70% of the composition.

Response to Arguments

Applicant argues that the cited prior art references do not disclose proanthocyanidins according to Formula I or II, especially in the amount of at least 70% of the active agent.

This is not persuasive because both Hashimoto and Morimoto et al. clearly teach that proanthocyanidins are isolated from oolong tea (green tea) and that proanthocyanidins degrade to catechin and epicatechin by hydrolysis. Furthermore, since proanthocyanidins have been disclosed as the active agent, it is obvious to one of

ordinary skill in the art to have optimized the concentration, when the general conditions are given.

Applicant also argues that the teaching 80% aqueous acetone is not considered a pharmaceutical acceptable carrier, diluent, or excipient.

This is not persuasive because Kuznicki et al. discloses a composition comprising green tea solids in water (pharmaceutical acceptable carrier).

In response to applicant's arguments against the references, one cannot show nonobviousness by attacking references individually where the rejections are based on the combination of references. See *In re Keller*, 642 F. 2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F. 2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong S. Chong whose telephone number is (571)-272-8513. The examiner can normally be reached on M-F, 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SREENI PADMANABHAN can be reached on (571)-272-0629. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YSC

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER